

Appl. No. 10/791,569

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (currently amended) A metallic material for an electronic component, said metallic material consisting of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0% by weight, a plurality of elements selected from ~~[[a]]~~ the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.

Claim 2. (original) A metallic material for an electronic component, said metallic material consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0% by weight.

Claim 3. (currently amended) A metallic material for electronic components, said metallic material consisting of an alloy including mainly Cu and having a composition of one or a

Appl. No. 10/791,569

plurality of elements selected from the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from ~~[[a]]~~ the group consisting of Al, Au, Ag~~[[,]]~~ ~~Ti[[,]]~~ Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.

Claim 4. (original) The metallic material for an electronic component according to one of claims 1 to 3, said metallic material having electrical resistance lower than 10 $\mu \Omega$ cm.

Claim 5. (currently amended) A metallic material for an electronic component, said metallic material consisting of a ternary alloy including mainly of Cu, Mo in an amount of 0.1 to 3.0% by weight and one element selected from ~~[[a]]~~ the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in an amount of 0.1 to 3.0% by weight.

Claim 6. (original) The metallic material for an electronic component according to claim 5, said metallic material having electrical resistance higher than 1.5 $\mu \Omega$ cm and lower than 7.0 $\mu \Omega$ cm.

Appl. No. 10/791,569

Claim 7. (original) The metallic material for an electronic component according to one of claim 1, claim 2, claim 3 and claim 5, said metallic material being used as a material for any one of a wiring pattern, an electrode, a contact and a target for a sputtering process.

Claim 8. (currently amended) An electronic component having a wiring pattern, an electrode or a contact using a metallic material, said metallic material consisting of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from **[[a]]** the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.

Claim 9. (original) An electronic component having a wiring pattern, an electrode or a contact using a metallic material, said metallic material consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0% by weight.

Appl. No. 10/791,569

Claim 10. (currently amended) An electronic component having a wiring pattern, an electrode or a contact using a metallic material, said metallic material consisting of an alloy including mainly Cu and having a composition of one or a plurality of elements selected from ~~[[a]]~~ the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from ~~[[a]]~~ the group consisting of Al, Au, ~~Ag[[,]]~~ ~~Ti[[,]]~~ Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.

Claim 11. (original) The electronic component according to one of claims 8 to 10, said electrical component having a wiring pattern, an electrode or a contact which are formed by an etching process using a solution including phosphoric acid and nitric acid.

Claim 12. (original) The electronic component according to one of claims 8 to 10, said electronic component having a wiring pattern, an electrode or a contact which are formed by an etching process under a gas atmosphere including chlorine.

Appl. No. 10/791,569

Claim 13. (currently amended) The electronic component according to one of claims 8 to 10, said electronic component having a region other than a wiring pattern, an electrode and a contact, which are formed by an etching process under a gas atmosphere including fluorine.

Claim 14. (original) The electronic component according to one of claims 8 to 10, said electronic component having a wiring pattern, an electrode or a contact which are formed by a heat treatment in the range of the temperatures from 100°C to 750°C.

Claim 15. (original) The electronic component according to one of claims 8 to 10, said electronic components having a wiring pattern, an electrode or a contact which are formed on a backing layer made of one of Ti, W, Ta, Mo, indium tin oxide, titanium nitride, oxidation silicon and silicon nitride.

Claim 16. (original) The electronic component according to one of claims 8 to 10, said electronic component having a wiring pattern, an electrode or a contact which are directly formed on a substrate made of one of glass or plastic resin.

Appl. No. 10/791,569

Claim 17. (currently amended) An electronic device having a wiring pattern, an electrode or a contact using a metallic material, said metallic material consisting of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.

Claim 18. (original) An electronic device having a wiring pattern, an electrode or a contact using a metallic material, said metallic material consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0 % by weight.

Claim 19. (currently amended)) An electronic device having a wiring pattern, an electrode or a contact using a metallic material, said metallic material consisting of an alloy including mainly Cu and having a composition of one or a plurality of elements selected from [[a]] the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from [[a]] the group consisting of

Appl. No. 10/791,569

Al, Au, Ag[[[,]] ~~Ti~~[[[,]] Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.

Claim 20. (original) The electronic device according to one of claims 17 to 19, said electronic device having a wiring pattern, an electrode or a contact which are formed by an etching process using a solution including phosphoric acid and nitric acid.

Claim 21. (original) The electronic device according to one of claims 17 to 19, said electronic device having a wiring pattern, an electrode or a contact which are formed by an etching process under a gas atmosphere including chlorine.

Claim 22. (currently amended) The electronic device according to one of claims 17 to 19, said electronic device having a region other than a wiring pattern, an electrode and a contact, which are formed by an etching process under a gas atmosphere including fluorine.

Claim 23. (original) The electronic device according to one of claims 17 to 19, said electronic device having a wiring

Appl. No. 10/791,569

pattern, an electrode or a contact which are formed by a heat treatment in the range of the temperatures from 100°C to 750°.

Claim 24. (original) The electronic device according to one of claims 17 to 19, said electronic device having a wiring pattern, an electrode or a contact which are formed on a backing layer made of one of Ti, W, Ta, Mo, indium tin oxide, titanium nitride, oxidation silicon and silicon nitride.

Claim 25. (original) The electronic device according to one of claims 17 to 19, said electronic device having a wiring pattern, an electrode or a contact which are directly formed on a substrate made of one of glass or plastic resin.

Claim 26. (currently amended) A working method of a metallic material, in which a metallic film consisting of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is etched by using a solution including

Appl. No. 10/791,569

phosphoric acid and nitric acid to form a wiring pattern, an electrode or a contact.

Claim 27. (original) A working method of a metallic material, in which a metallic film consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0 % by weight is etched by using a solution including phosphoric acid and nitric acid to form a wiring pattern, an electrode or a contact.

Claim 28. (currently amended) A working method of a metallic material, in which a metallic film consisting of an alloy including mainly Cu having a composition of one or a plurality of elements selected from **[[a]]** the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from **[[a]]** the group consisting of Al, Au, Ag~~[[,]]~~ ~~Ti~~~~[[,]]~~ Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is etched by using a solution including phosphoric acid and nitric acid to form a wiring pattern, an electrode or a contact.

Claim 29. (currently amended) A working method of a metallic material, in which a metallic film consisting of an alloy

Appl. No. 10/791,569

including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is etched under a gas atmosphere including hydrochloric acid to form a wiring pattern, an electrode or a contact.

Claim 30. (original) A working method of a metallic material, in which a metallic film consisting of a binary alloy including mainly of Cu and Mo in an amount of 0.1 to 3.0 % by weight is etched under a gas atmosphere including hydrochloric acid to form a wiring pattern, an electrode or a contact.

Claim 31. (currently amended) A working method of a metallic material, in which a metallic film consisting of an alloy including mainly Cu and having a composition of one or a plurality of elements selected from [[a]] the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag~~[[,]] Ti[[,]]~~ Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is

Appl. No. 10/791,569

etched under a gas atmosphere including hydrochloric acid to form a wiring pattern, an electrode or a contact.

Claim 32. (currently amended) A manufacturing method of electronic component, in which a metallic film is consisted of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content, and a film other than said metallic film is worked by an etching process under a gas atmosphere including fluorine.

Claim 33. (original) A manufacturing method of an electronic component, in which a metallic film is consisted of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0 % by weight, and a film other than said metallic film is worked by an etching process under a gas atmosphere including fluorine.

Claim 34. (currently amended) A manufacturing method of an electronic component, in which a metallic film is consisted of an alloy including mainly Cu and having a composition of one or a

Appl. No. 10/791,569

plurality of elements selected from **[[a]]** the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from **[[a]]** the group consisting of Al, Au, Ag**[[,]]** ~~Ti~~**[[,]]** Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content, and a film other than said metallic film is worked by an etching process under a gas atmosphere including fluorine.

Claim 35. (currently amended) A working method of a metallic material, in which a metallic film formed by said metallic material consisting of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from **[[a]]** the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is subjected to a heat treatment in the range of temperatures ~~to~~ from 100°C to 750°C to form a wiring pattern, an electrode or a contact.

Claim 36. (currently amended) A working method of a metallic material, in which a metallic film formed by said metallic material consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0 % by weight is subjected to a heat

Appl. No. 10/791,569

treatment in a range of temperatures ~~to~~ from 100°C to 750°C to form a wiring pattern, an electrode or a contact.

Claim 37. (currently amended) A working method of a metallic material, in which a metallic film formed by said metallic material consisting of an alloy including mainly Cu and having a composition of one or a plurality of elements selected from [[a]] the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, ~~Ti~~[[,]] Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is subjected to a heat treatment in a range of temperatures ~~to~~ from 100°C to 750°C to form a wiring pattern, an electrode or a contact.

Claim 38. (currently amended) A working method of a metallic material, in which a metallic film formed by said metallic material consisting of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is deposited on a backing

Appl. No. 10/791,569

layer made of one of Ti, W, Ta, Mo, indium tin oxide, titanium nitride, oxidation silicon and silicon nitride to form a wiring pattern, an electrode or a contact.

Claim 39. (original) A working method of a metallic material, in which a metallic film formed by said metallic material consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0 % by weight is deposited on a backing layer made of one of Ti, W, Ta, Mo, indium tin oxide, titanium nitride, oxidation silicon and silicon nitride to form a wiring pattern, an electrode or a contact.

Claim 40. (currently amended) 40. A working method of a metallic material, in which a metallic film formed by said metallic material consisting of an alloy including mainly Cu and having a composition of one or a plurality of elements selected from [[a]] the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weigh, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, ~~Ti~~[[,]] Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is deposited on a backing layer made of one of Ti, W, Ta, Mo, indium tin oxide, titanium nitride,

Appl. No. 10/791,569

oxidation silicon and silicon nitride to form a wiring pattern, an electrode or a contact.

Claim 41. (currently amended) A working method of a metallic material, in which a metallic film formed by said metallic material consisting of an alloy including mainly Cu and having a composition of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from ~~[[a]]~~ the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is directly deposited on a substrate made of glass or resin such as plastic to form a wiring pattern, an electrode or a contact.

Claim 42. (original) A working method of a metallic material, in which a metallic film formed by said metallic material consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0 % by weight is directly deposited on a substrate made of glass or resin such as plastic to form a wiring pattern, an electrode or a contact.

Claim 43. (currently amended) A working method of a metallic material, in which a metallic film formed by said metallic

Appl. No. 10/791,569

material consisting of an alloy including mainly Cu and having a composition of one or a plurality of elements selected from [[a]] the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag~~[[,]]~~ ~~Ti~~~~[[,]]~~ Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content is directly deposited on a substrate made of glass or resin such as plastic to form a wiring pattern, an electrode or a contact.

Claim 44. (currently amended) An electronic optical component having reflective film, an electrode or a wiring pattern which are formed by a metallic film consisting of an alloy including mainly Cu and having a content of Mo in an amount of 0.1 to 3.0 % by weight, one or a plurality of elements selected from [[a]] the group consisting of Al, Au, Ag, Ti, Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.

Claim 45. (original) An electronic optical component having reflective film, an electrode or a wiring pattern which are formed by a metallic film consisting of a binary alloy including mainly Cu and Mo in an amount of 0.1 to 3.0 % by weight.

Appl. No. 10/791,569

Claim 46. (currently amended) An electronic optical component having reflective film, an electrode or a wiring pattern which are formed by a metallic film consisting of an alloy including mainly Cu and having a composition of one or a plurality of elements selected from **[[a]]** the group consisting of Cr, Ta, W and Ti in a total amount of 0.1 to 3.0% by weight, one or a plurality of elements selected from **[[a]]** the group consisting of Al, Au, Ag~~[[,]]~~ ~~Ti~~~~[[,]]~~ Ni, Co and Si in a total amount of 0.1 to 3.0% by weight and Cu as a remaining content.